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THE PLANT DISEASE REPORTER

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The Plant Disease Reporter is issued as a service to plant pathologists throughout the United States. It contains reports, summaries, observations, and comments submitted voluntarily by qualified observers. These reports often are in the form of suggestions, queries, and opinions, frequently purely tentative, offered for consideration or discussion rather than as matters of established fact. In accepting and publishing this material the Division of Mycology and Disease Survey serves merely as an informational clearing house. It does not assume responsibility for the subject matter.

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EPIDEMIC OF CHARCOAL ROT OF CORN AND OTHER CROPS IN EAST TEXAS

P. A. Young

Since corn yields are unusually low in East Texas this year, corn was examined at the Tomato Disease Laboratory and in many fields near Jacksonville, Nacogdoches, Troup, and Tyler in August. Most of the corn stalks showed roots and crowns discolored and rotted by Charcoal Rot, and contained many sclerotia of Sclerotium bataticola Taub.

The epidemic of CharcoalRot of corn was facilitated by the following contributing causes this year: (1) the excessive spring rains packed soil around the corn seedlings and delayed their growth as much as 2 to 4 weeks; (2) most of the red and sandy soils are low in fertility, and this was decreased when rain leached much commercial fertilizer from the soil; (3) the hot dry weather from June to August weakened the corn and increased its susceptibility to S. bataticola, which is most destructive in hot dry weather such as occurs nearly every year.

The following symptoms appeared as soon as the corn stalks became nearly dry in July and August: Some of the roots are black, gray, brown, or purple, and partly hollow, and the discolored roots contain black sclerotia. Main roots may look normal externally but many of them are hollow and black inside. The interior of the root crown is black, gray, brown, or purple; it is usually partly shredded and hollow and contains many sclerotia when it is black. The lowest tip of the crown apparently turns black or brown first. Black cankers with prominent borders were seen on the bases of many corn stalks. Green corn stalks commonly show a brown to purple discoloration of the interior of the crown nodes, indicating metal accumulation which may increase the susceptibility of the nodes to fungous infection (7).

S. bataticola commonly grows in the lower 18 inches of the corn stalks, where the epidermis turns gray and often appears black from the many sclerotia showing through it. White pith inside such stems is dotted with many black sclerotia. In late stages, there usually is shredding of the bases of the stems, making them partly hollow. Such weakening of the stems and roots often results in lodging of the stalks.

In the experimental plots at the Tomato Disease Laboratory, S. bataticola also caused Charcoal Rot of the stems of tomato, white potato, Pinto bean, velvet bean, cowpeas, Hubam sweetclover, Ogden soybean, watermelon, cantaloupe, sorghum, sweet corn, Crotalaria spectabilis, and Cosmos sulphureus. The beans, cowpeas, sweetclover, and sweet corn were very susceptible and badly damaged. Parts of 2 cantaloupe fruits were blackened with sclerotia.

Crotalaria spectabilis, Cosmos sulphureus, tomato, and soybean showed subepidermal sclerotia in the lower parts of the stems. A main symptom of Charcoal Rot (Ashy Stem Blight) of corn, cowpea, bean, and sweetclover is the gray color of the stem epidermis in which or under which the sclerotia are seen as black dots. Pycnidia of Macrophomina are found in the epidermis of cowpea stems.

A review of literature, especially including citations given below, indicates the wide host range and destructiveness of S. bataticola attacking crop plants. The diseases that it causes are known by 2 common names: Charcoal Rot and Ashy Stem Blight, depending on the predominating symptoms.

It is concluded that Rhizoctonia bataticola is a synonym of Sclerotium bataticola, and that Macrophomina phaseoli is the pycnidial stage of the same fungus.

Adequate rains at the right times, organic matter and commercial fertilizer in the soil, and good cultivation promote vigorous growth that helps corn to bear fair yields despite some injury by Charcoal Rot. Crops like tomatoes that develop in cool weather, and crops that remain green and vigorous until frosted, are likely to have minimum damage from Charcoal Rot. Tomato, cotton, peanut, velvet bean, Glottidium, citron, the early strain of Crotalaria spectabilis, and some varieties of sorghum, show valuable resistance to the disease.

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TEXAS AGRICULTURAL EXPERIMENT STATION TOMATO DISEASE LABORATORY, JACKSONVILLE.

INCIDENCE OF CHARCOAL ROT IN NORTH AND EAST TEXAS

George E. Altstatt and P. A. Young

During the period of September 8-13, a survey of the North and East Texas corn crop was made to observe the extent of Charcoal Rot (Sclerotium bataticola) damage to corn and other crops. The area surveyed was bounded by the cities of Jacksonville, Greenville, Denton, Gainesville, Paris, Marshall, Jasper, Beaumont, and Livingston.

Charcoal Rot infection was evident in all corn fields examined with the exception of 2 fields near Livingston, where some damage was noted which could not be readily identified. Charcoal Rot was evidenced in all cases by the presence of numerous black sclerotia in the pith of the corn stalks. Most fields showed 100% infection. In some fields, lodging was more common. In many cases the stalk, when split at the point of "break-over", showed large numbers of sclerotia, indicating that this organism had been a factor causing the lodging.

Mature sorghum and milo was observed at U.S.D.A. Cotton Station, Greenville, and Texas Agricultural Experiment Station Substation 6 at Denton, and the fungus was evident in most cases. It was also evident on sweet sudan and Hubam clover at the Greenville Station. The sclerotia were observed on roots of dead okra and sesame at Denton.

It appears from this survey, that Sclerotium batatícola has been unusually active this season, and has become an important factor in the drastic reduction of corn yields in North and East Texas.

EMERGENCY PLANT DISEASE PREVENTION PROJECT AND TEXAS AGRICULTURAL EXPERIMENT STATION

DISEASES OF CORN IN ILLINOIS

J. S. Tidd

The writer, together with Dr. Benjamin Koehler of the Illinois Agricultural Experiment Station at Urbana, surveyed field corn and soybeans for disease in an area covering east-central, southwestern, and western Illinois. Surveys were made in 15 counties, beginning with Champaign County and continuing southwest to St. Clair County in the Belleville area, thence north and west to Adams, Hancock, and Schuyler Counties, thence east to Urbana. Stops were also made at 2 of the Illinois Soil Experiment Stations and at trial and production grounds of 2 commercial hybrid seed corn growers. For various reasons, no attempt will be made in the following account to cover the limited observations made at these latter stations.

Corn in many fields was still green and in others approaching maturity. Diplodia Stalk Rot (Diplodia zeae) was responsible for the dead and dying plants in most of the areas surveyed, although chinch bug injury and Stewart's Disease (Bacterium stewartii) were probably contributing factors increasing susceptibility to this fungus. The Diplodia-infected plants were especially conspicuous, in those fields still green, as dead stalks some of which had already started to break and fall over. When cut open, the bases of the stems were rotted. In many instances, the pycnidia of the fungus were visible at the surface of the brown discolored basal portion of the stalk.

The amount of Diplodia Stalk Rot varied; in some fields only 5% of the plants were infected whereas in others, 20 to 30% of the plants were dead. In one 15-acre planting in Cass County, at least 50% of the corn was estimated as having died prematurely from Diplodia zeae infection.

An estimate of crop loss due to Diplodia zeae is difficult to make because Stewart's Disease was common, as much as 25% of the leaf surface on all plants in some fields being dead. This combined with occasional traces of Rust (Puccinia sorghi), Smut (Ustilago maydis), and chinch bug injury served to further complicate matters. The ears were fairly well filled yet

the kernels at harvest will undoubtedly be lighter in weight and the losses higher than can be forseen at the present.

In one hybrid seed production field of 50-acres in southwestern Illinois, loss from Smut alone was, however, estimated at 25% or higher. Fifty percent of the detasselled (female) plants were infected with Smut and the ears reduced in size and light in weight.

In Pike County, near Atlas, just east of the Mississippi, Charcoal Rot (Sclerotium bataticola) had caused the death of 3% of the corn in 15 acres. Sclerotia were found in abundance in the charcoal colored and shredded pith. This was the only field in which this disease was observed. On some of these and some of the Diplodia-infected stalks in the same field, Fusarium sp. was also observed at the nodes.

Lightning Injury and death of plants was observed at one spot in a 48-acre planting of field corn in Adams County.

Purple Sheath Spot was fairly common in all fields.

EMERGENCY PLANT DISEASE PREVENTION PROJECT

OTHER REPORTS ON CORN DISEASES

Reports are of Emergency Plant Disease Prevention Project surveys.

DISEASES IN SOUTHEASTERN PENNSYLVANIA: The 2 most common diseases seen on corn [presumably sweet corn] in the area surveyed (chiefly Lancaster, Chester, Delaware, and Montgomery Counties) were the ominipresent corn Smut and the Leaf Blight (Helminthosporium turcicum). In Lancaster County, plots were seen in which nearly all of the lower leaves bore from 1 to 4 Helminthosporium lesions involving an estimated total of 5 to 15% of the leaf area. It was not felt that any appreciable loss was resulting. Earlier in the season Leaf Blight had threatened to become a serious problem, but dry weather had checked it pretty well. -- John S. Niederhauser, August 29 - September 1.

DIPLODIA AND OTHER DISEASES IN IOWA: During the period August 30 to September 9 surveys were made in Cherokee, O'Brien, Lyon, Osceola, Dickinson, Emmett, Palo Alto, Clay, Buena Vista, and Pocahontas Counties in northwestern Iowa, and in Jasper, Poweshiek, Mahaska, Marion, Polk, and Dallas Counties in the central and south-central parts of the State.

Diplodia [zeae] Ear and Stalk Rot has begun to appear in field corn and sweet corn fields. In field corn the differences between fields in amount of infection varied from a trace to as much as 10%, differences between fields being much greater than variation within a single field which would indicate that some claims for hybrid resistance may be justified.

In sweet corn now being harvested for the canneries, yellow varieties appear to be more affected than white varieties; this observation was made both in the field and later at the canning factories. Canning factory managers at Altoona, Grimes, and Ames stated that they had not observed the Ear Rot in the white varieties.

As reported previously, Rust and Smut are general over the State on all varieties of field, sweet, and popcorn. Rust is more common in the southern than the northern part of the State. Rust will not cause more than a trace of loss while Smut losses will vary from a trace to a maximum of 10% in a few fields.

Stewart's Bacterial Wilt was found in a few places and was of only minor importance. -- Edgar F. Vestal.

DISEASES IN MISSOURI: Observations were made in early-planted field corn stands in an area extending from central to west-central Missouri, north of the Missouri River. Such stands are maturing rapidly, with the majority of ears with shucks dry or drying. Most of the fields showed premature dying of the stalks of scattered plants, which, upon cutting of the lower nodes, showed symptoms characteristic of Diplodia zeae infection. The number of plants affected ranged from none to 26%, averaging 10%.

Smut infection of the nodes was observed in 50% of the fields, ranging from 2 to 6%, averaging slightly more than 2%.

A preliminary survey of Ear Rots showed a relatively high percentage of ears affected, the total number ranging from 20 to 41%, averaging 29%. This total was distributed among the various causal agents as follows:

Diplodia zeae	0 to 8%	Average 3.4%
Penicillium sp.	4 to 14%	8.2%
Fusarium sp.	6 to 14%	9.1%
Gibberella saubinetii [G. zeae]	0 to 10%	2.8%
Nigrospora oryzae	0 to 8%	4.5%

Infection by Penicillium and Fusarium in most instances was confined to the tip of the ear and apparently followed corn ear worm damage.

In all fields there was evidence of Bacterial Wilt foliage infection, but the extent of leaf surface affected was difficult to estimate because of the general drying of the leaves. -- T. W. Bretz, period ending September 9.

DISEASES REPORTED ON SPECIAL CROPS

Reports are of Emergency Plant Disease Prevention Project surveys.

COTTON DISEASES IN SOUTH CAROLINA: Fusarium Wilt caused by Fusarium [oxysporum f.] vasinfectum seems to be the most serious cause of loss due to fungi in the Piedmont area this year. Since there has been little rain in this area this season the usual Boll Rots are not common and are doing little if any damage. Lightning Injury was observed in Saluda and Chester Counties. One farmer in Chester County complained of "Rust" (Potassium Deficiency) but no definite conclusions could be drawn because the Wilt fungus was also present in the spot. The farmer had made no attempt at control measures. -- Alton E. Prince, August 28-September 9.

DISEASES OF COTTON IN MISSISSIPPI: Surveys during the week ending September 1 were conducted in the Poplarville-Laurel-Meridian areas. Cotton was well on the way to maturity and was being picked on many farms. Evidence of "Rust" (Potassium Deficiency) and Fusarium Wilt was found in practically every field observed. A considerable amount of Boll Rot (Diplodia gossypina), estimated at 15 to 20%, was found in one field near Laurel. Traces of Ascochyta gossypina and Rhizoctonia solani causing Leaf Spots were found in many fields.

The Wilt reported near Port Gibson (PDR, Aug. 22, p. 837) as resembling Verticillium Wilt, apparently was not caused by Verticillium but by Fusarium, since Verticillium was not obtained in cultures. -- Douglas C. Bain

FUSARIUM ON GUAYULE IN TEXAS: Dead and dying plants at Ysleta showed symptoms of a Crown Rot. Specimens sent to Dr. D. A. Preston yielded Fusarium sp. only. -- George E. Altstatt, Sept. 8-13.

DISEASES OBSERVED ON SUGAR BEETS IN WYOMING AND COLORADO: During the latter part of August a survey was made with Dr. G. H. Starr of the University of Wyoming in Platte, Johnson, Converse, Sheridan, Big Horn, Park, Washakie, Hot Springs, and Fremont Counties. Curly Top (Virus) was found in traces and Crown Rot (Rhizoctonia solani) in amounts ranging from a trace to 1% in most of the sugar beet fields examined in Platte, Big Horn, Park, and Washakie Counties. The largest amount of Crown Rot observed was in a 20-acre field in the vicinity of Worland where 20% of the plants were affected. Leaf Spot caused by Phoma betae was found in trace amounts in 2 fields in Sheridan County, and a trace of Cercospora beticola Leaf Spot was noted in one field south of Basin in Big Horn County.

During the week ending August 18, representative sugar beet fields were examined in Larimer and Weld Counties in northern Colorado. In one small field east of Loveland in Larimer County, Cercospora Leaf Spot was found on 50% of the plants; in other fields from a trace to none was observed. Phoma betae was found in trace amounts in most of the fields inspected in both counties. A trace of Rhizoctonia Crown Rot was seen in one field in Larimer County.

Traces of Phoma and Cercospora were found in all fields examined in Weld County, with Dr. H. A. Edson, September 1.

In Mesa and Delta Counties on the western slope of Colorado, during the week ending September 9, only a few plants affected with Curly Top were found; a few fields inspected showed from a trace to 1% of Rhizoctonia Crown Rot; no Leaf Spots were encountered. -- E. W. Bodine

TOBACCO DISEASES IN CONNECTICUT: The tobacco season is drawing to a close for this year in Connecticut, and the following is a brief summary of the disease situation as gained in conversation with Dr. P. J. Anderson, Plant Pathologist of the Tobacco Substation at Windsor.

As reported earlier, Black Root Rot (Thielaviopsis basicola) was more prevalent this year than it has been for many years, especially in tent tobacco. Many tents had as high as 25% affected plants, and many such plants remained stunted throughout the season. Calico (Mosaic Virus) also was more prevalent than usual. Many fields showed 2 to 3% affected plants. Traces of Hollow Stalk (Bacillus [Erwinia] aroideae) were found in several fields and one field contained up to 3% affected plants. Occasional Streak (Virus)-infected plants were seen in scattered fields throughout the area. A small percentage of Soreshin (Rhizoctonia sp.) was present in Connecticut this year.

Phosphorus Deficiency was seen in a number of fields; its occurrence is attributed to the smaller quantities of fertilizer available for use this year. Nitrogen Deficiency has been almost absent. Rainfall was much below normal and as a result leaching was at a minimum in most soils.

No Brown Root Rot (cause unknown) nor Downy Mildew (Peronospora tabacina) was seen under field or tent culture.

Dr. Anderson stated that he could not remember when there was less disease than occurred this year. -- Robert C. Cassell, Sept. 4-6

TOBACCO DISEASES IN MARYLAND: A 20-acre field near Goldsboro on the Eastern Shore was examined and found to be free from disease just after being transplanted (June 19-24). In a later examination (July 14-22), Mosaic was present on 5% of the half-grown plants. It is unusual to see tobacco grown on the Eastern Shore.

In Prince Georges County (July 25-31), Anthracnose (Colletotrichum sp.) was observed on lower leaves of plants in fields, causing white leaf spots and lateral vein and midrib cankers. At Largo 2 fields, at Hall 1 field, showed from 30 to 40% of the plants affected. A field visited near Croom had been replanted with Anthracnose stem-infected plants, resulting in a poor stand with about 20% missing plants. In the plant bed from which the replants came, 100% of the plants were affected with stem and leaf-midrib cankers. Mosaic infection appeared light in the Maryland tobacco section. In the Largo area infection averaged less than 1.5%. At Hall 1 field visited was free from Mosaic, while 4 fields showed severe Mosaic on the half-grown plants, averaging 8, 10, 20, and 30%, respectively, in counts.

In Carroll County in northern Maryland (1st week in August) Mosaic was very light or absent in 3 fields near Kemptown; in an isolated field near Day P. O. about 2% was noted.

A field observed near Laurel in Prince Georges County (Aug. 7-12) showed 1% Ringspot (Virus) as the only disease present. -- E. A. Walker

REPORTS ON POTATO DISEASES AND INJURIES

Reports are of Emergency Plant Disease Prevention Project surveys.

LATE BLIGHT IN CONNECTICUT: Potato yields in the Broad Brook, Melrose, Ellington, and Rockville areas of Hartford and Tolland Counties in northern Connecticut appear to be somewhat improved over 1943 yields. There is considerable variation between fields of the same variety, for instance, one field of Chippewas was yielding 116 bushels per acre and another 2 miles away almost 300 bushels. Judging from the few fields dug to date the average yield should be at least 250 to 275 bushels per acre for the area. One field of Katahdins yielded 350 bushels per acre. Rainfall in this area, although quite scattered, has been greater on the whole than in most other Connecticut sections.

Light to moderate Late Blight (Phytophthora infestans) infection was found scattered throughout one field in Ellington, a 5-acre late-planted Green Mountain field. In contrast to most fields, the tops in this field were still relatively green. What appeared to be the original infection center was now devoid of any active Blight and the affected plants were completely dead. However, active Blight could be found rather uniformly spread throughout the remainder of the field. This apparently is the only report of the disease in Connecticut this year or last. A trace of Blackleg (Erwinia atroseptica) [E. phytophthora] was also present in the field.

Wireworm continues to be the major trouble of this large potato area. Hardly a well-formed tuber could be found in the fields examined without one or more wireworm punctures. -- Robert C. Cassell, September 4-6.

PINK ROT AND OTHER DISEASES IN RHODE ISLAND: The 3 potato-growing areas of Perryville-Tuckertown, Slocum, and Tiverton-Little Compton were visited. Yields were approximately the same in what could be determined of the fields dug. Yields in the Perryville-Tuckertown and Tiverton-Little Compton area will average about 200 bushels per acre. Yields in the Slocum area may be a little greater possibly up to 225 bushels. Except for Scab, Rhizoctonia, and a slight amount of wireworm damage the tubers seemed to be perfectly sound, although somewhat undersized. Scab (Actinomyces scabies) was found in 6 fields in Little Compton, Tiverton, Perryville, and Tuckertown. Three fields in Little Compton were the worst affected; these fields were from 5 to 10 acres in size and each will lose about 1/2 acre of potatoes because of Scab. Only a trace of Rhizoctonia (R. solani) was found in 2 or 3 fields. A half-dozen tubers were found in a low area of one field affected with Pink Rot (Phytophthora erythroseptica). -- Robert C. Cassell, September 7-9.

DROUGHT DAMAGE ON LONG ISLAND: The first crop of potatoes in Suffolk County on Long Island is maturing or already dead. Yields were severely cut by the drought and hot weather, and even in fields where irrigation was used throughout the dry spell, only about 75% of the usual yield was being obtained. It was reported that in some fields where no irrigation was available, the yield was as low as 80 bushels to the acre. -- John S. Niederhauser, August 22-24.

EARLY BLIGHT IN SOUTH CAROLINA: In Saluda County in the Piedmont area, where late potatoes are grown, the only evidence of fungous diseases was a very slight Early Blight (Alternaria solani) infection. -- Alton E. Prince, August 28-September 9.

PURPLE-TOP WILT IN MINNESOTA: On September 7, 8 and 9, R. C. Rose, Extension Plant Pathologist, University of Minnesota, and the writer visited the principal truck crop areas in southeastern Minnesota. Little Purple-Top Wilt has developed in the Hollandale area, the percentage of infected plants not exceeding 0.01. In marked contrast to the low infection figure in southern Minnesota, potatoes in northern Minnesota have been heavily infected. One field near Baudette in the northern part had 20% of the plants wilted from Purple-Top Wilt, and all other plants showed signs of purpling on the foliage. It seems worth while to emphasize again the lack of relationship between Aster Yellows on carrots, etc. (see PDR Aug. 15, p. 816-817), and the incidence of Purple-Top Wilt on potatoes.-- Ian W. Tervet.

LATE BLIGHT AND EARLY BLIGHT IN IOWA: During the period August 30 to September 9 surveys were made in Cherokee, O'Brien, Lyon, Osceola, Dickinson, Emmet, Palo Alto, Clay, Buena Vista, and Pocahontas Counties in the northwestern part of Iowa. During this period the mean rainfall for the State was 0.47 inches which is 0.38 inches below normal. The mean temperature for the same period was 69° F which was 1° above normal.

Late Blight has appeared in all fields seen and is believed to be present in all fields. In the region of Armstrong in Emmet County, and in Clay, Palo Alto, Buena Vista, Pocahontas and Sac Counties early potatoes are being dug while most of the late potatoes are maturing rapidly. In one or

two cases of very late plantings of late potatoes the farmers were spraying in the hope of saving the tops long enough to mature the tubers.

Early Blight is appearing in the fields but it is too late to hurt this year's crop. -- Edgar F. Vestal.

LATE BLIGHT IN WELD COUNTY AND OTHER DISEASES IN COLORADO: A survey for Late Blight was made in the vicinities of Greeley, Lucerne, Ault, and Eaton in Weld County in northern Colorado on September 4. Late Blight was found in only one field on this date, near Lucerne, located 500 feet from 6 cull piles where abundant Late Blight lesions were present on August 4. On September 4 most plants in the cull piles were dead and only a few lesions were found on the remaining plants. Infection in the field was confined to only the top leaves and petioles of affected plants, and was general over the field but present in a very slight amount. It is thought, therefore, that the spores of the organism were blown or carried to the field from the nearby cull piles.

In Eagle and Garfield Counties in central Colorado Fusarium Wilts (F. oxysporum and F. solani f. eumartii) were common in all fields examined. In some fields 50% of the plants were infected. Mosaic (Virus) was general and high incidence was observed in several fields. Bacterial Ringrot [Corynebacterium sepedonicum] was more prevalent than in 1943. Early Blight was general but causing no damage. No Late Blight was observed in these counties.

In Delta County in western Colorado, in the vicinity of Olathe potato harvest was in progress. Bacterial Ringrot appeared to be more prevalent this year than in 1943. Fusarium Wilts, Scab, Rhizoctonia, Blackleg, Early Blight, and the Virus Diseases Mosaic, Leaf Roll, and Spindle Tuber were common and general in all fields surveyed. -- E. W. Bodine, week ending September 9.

DISEASES REPORTED ON TOMATO, EGGPLANT, AND PEPPER

Reports are of Emergency Plant Disease Prevention Project surveys.

TOMATO DISEASES IN NEW YORK: In Nassau County on Long Island most tomato fields showed little or no disease owing to long-continued drought. The case noted is not typical of the general situation. A field of "plum" tomatoes showed between 25 and 30% defoliation due to Alternaria solani. In this same field Bacterial Canker (Corynebacterium michiganense) was responsible for leaf blight and vine-killing on 25% of the plants and a few fruits showed typical Bacterial Canker lesions. A trace of Anthracnose (Colletotrichum phomoides) was also noted. Most of these troubles were due to the fact that the grower had planted tomatoes on the same field the previous year. Tobacco-Mosaic symptoms were showing in the upper portions of nearly all the plants, indicating rather late infection. Tomatoes are not one of the principal crops in this area, and the damage done in this case is of limited significance. -- John S. Niederhauser, August 22-24.

TOMATO DISEASES IN PENNSYLVANIA: In Chester County in one field the crop of ripe fruit contained the following kinds and amounts of diseases: Anthracnose, 7.5% (unsprayed), 4% (sprayed), Blight (Alternaria solani)

1.5%, Blossom-End Rot (physiogenic) 1%, Sun-Scald followed by various fruit-rotting organisms, 2.5%. Defoliation due to A. solani amounted to about 15%.

In Montgomery County, part of a field was set with southern-grown plants that earlier in the season had shown considerable Early Blight stem and leaf lesions. By September 1 approximately 30% of the leaves were lost in this part, while in the rest of the field which was set with relatively clean stock, the plants were from 5 to 20% defoliated. Leaf Mold (Cladosporium fulvum) was present in 3 to 4 localized areas involving about 5% of the field; in these areas all of the plants were affected, with 1 to 10 lesions on nearly all the green leaves. Earlier in the season, Dr. R. S. Kirby reported that 82% of the fruit in this field showed Blossom-end Rot; about 15% of the ripe fruit was so affected on September 1. An average of 2% of the ripe fruit showed Alternaria lesions on the stem end, and a trace of Anthracnose was seen.

In Lancaster County, one small plot of staked tomatoes was completely defoliated by Early Blight. -- John S. Niederhauser, August 29-September 1.

TOMATO DISEASES IN TEXAS: Near Shallowater, in Lubbock County in northwest Texas, 10% of one field was killed by the Rootknot Nematode (Heterodera marioni). This field also showed traces of Bacterial Spot (Phytomonas [Xanthomonas] vesicatoria). In a field north of El Paso Rootknot had caused a mortality of 5% and another 5% of the plants were infected with the nematode. A few plants in this field were infected by Fusarium oxysporum f. lycopersici. -- George E. Altstatt, September 8-13.

TOMATO DISEASES IN IOWA: During the period August 30 to September 9 tomatoes were examined in the central and south-central parts of the State. During this period the mean rainfall for the State was 0.47 inches which is 0.38 inches below normal. The mean temperature for the same period was 69° F which was 1° above normal. This rise in temperature and reduction in rainfall over the previous week has been a factor in the reduction of disease and rots which have been serious in many sectionsof the State, especially in the tomato-growing regions.

The area in the neighborhood of Oskaloosa and Pella was visited again (see PDR preceding issue) to determine the progress of the Bacterial Spotting and Soft Rots on tomatoes. No new infections of the Bacterial Spot nor of Bacterial Canker were found but cannery managers stated that the Soft Rots had caused losses of over 50% of all the early pickings.

At Grimes in Dallas County one cannery field of about 20 acres was so badly affected by Bacterial Spot and Bacterial Canker that it was not expected any fruit could be harvested.

Early Blight is still killing much of the foliage and thus exposing the fruits to the sun. Some Fusarium Wilt was observed but the loss will be only a trace. The same would be true of Mosaic. -- Edgar F. Vestal.

VIRUS DISEASES AND PYSLLID YELLOWS ON TOMATOES IN WYOMING: During the latter part of August a survey was made in company with Dr. G. H. Starr of the University of Wyoming, in Platte, Johnson, Converse, Sheridan, Big Horn, Park, Washakie, Hot Springs, and Fremont Counties. A trace of Curly Top was found in tomato plantings in Park County. A few scattered plants were found with Tomato Streak in the vicinity of Thermopolis in Hot Springs County. Psyllid Yellows was common in all tomato plantings inspected in Wyoming. -- E. W. Bodine.

TOMATO DISEASES AND INJURIES IN COLORADO: Early Blight, Fusarium Wilt, Bacterial Canker, and the Virus Diseases Mosaic and Spotted Wilt were found in trace amounts in all fields in Weld and Larimer Counties in northern Colorado during the week ending August 18.

Tomatoes were examined in Mesa County on the western slope during the week ending September 9. Curly Top appeared to be the most serious disease present. It was general over the area and was found in amounts varying from a trace to as high as 20% in some fields.

Spotted Wilt was found in all fields inspected. In only a few fields, however, infection ranged from 10 to 20%; in other fields only trace amounts were recorded. It was expected earlier in the season (see PDR Aug. 1, p. 762) that Spotted Wilt would cause considerable damage; however, the expected amount of spread did not take place.

Fusarium Wilt was general in all the fields surveyed but was found in only trace amounts.

The Tomato Russet Mite (Phyllocoptes destructor) was seen in one field examined in company with Mr. John Hoerner, Associate Entomologist of the Colorado Experiment Station. This 4-acre patch was 100% infested. According to Mr. Hoerner the Russet Mite was first found on tomato plants in this field in 1943.

Some Psyllid Yellows damage was also apparent. -- E. W. Bodine.

VIRUS AND NON-PARASITIC TROUBLES OF TOMATO IN WESTERN OREGON: In Douglas County harvest was in progress (Aug. 28-29). Blossom-End Rot was very prevalent and according to growers was causing more loss than usual. From the amount of evidently diseased fruit noted and the amount claimed to have been disposed of by pickers already, it is estimated that the loss will average between 10 and 15%. Traces of Curly Top (Western Yellow Blight) were noted in scattered plantings. Near Dillard, Tip Blight (Virus) was prevalent in certain plantings, as much as 50% loss being noted. However, tomatoes are not considered a primary crop in this area; production is principally to supply local and roadside markets.

Tip Blight and Blossom-End Rot were noted in several plantings in Lane County (August 30-31), but in no case were they observed to be causing significant reduction in yield.

From a trace to 10% of Curly Top was noted from Rainier in Columbia County to Troutdale in Multnomah County (Sept. 7-9). Blossom-End Rot was very prevalent and causing more than the normal loss, according to growers. Sun Scald was also causing losses greater than normal. -- Lytton W. Boyle.

REPORTS ON DISEASES OF EGGPLANT: Verticillium Wilt (V. albo-atrum). About 75% of the plants in a 3-acre field in Hamden, New Haven County, CONNECTICUT, were so severely affected as to account for about the same percentage of loss (Robert C. Cassell, August 14-16). Wilt was observed on 12% of the plants in a planting of about a half-acre in Lancaster County, PENNSYLVANIA; some of the wilt-diseased plants were already dead and on others the leaves were wilting and turning brown between the veins (John S. Niederhauser, August 29). In Cass County, INDIANA, 25% infection was found on one market-gardener's farm (J. S. Tidd, August 7-12). In ILLINOIS the disease was observed around Sterling and Peoria in Whiteside and Peoria Counties, respectively. At Sterling 10% of the plants in a 3/4-

acre plot were infected and starting to die. Only a few infected plants were observed in a half-acre field in the Peoria region (J. S. Tidd, week ending August 5). In southern WASHINGTON, characteristic symptoms in varying degrees of severity were noted in Benton County, where the disease is said to be quite prevalent, according to Dr. J. D. Menzies and also to growers (Lytton W. Boyle, July 24-31).

Other Diseases. Phomopsis vexans was present in 5% of the ripening fruit in the half-acre planting observed in Lancaster County, PENNSYLVANIA (John S. Niederhauser, August 29). In ARKANSAS, Phomopsis Blight and Southern Blight (Sclerotium rolfsii) were noted in a planting near Rohwer in Desha County. A loss of several of the fruits was caused by Phomopsis primarily, followed by secondary organisms such as Aspergillus and Rhizopus. The Southern Blight had caused nearly 2% loss of plants and typical symptoms were appearing on other plants (Howard W. Larsh, July 27-August 12).

DISEASES OF PEPPER: In CONNECTICUT, Blossom-End Rot was causing 75% loss in a half-acre planting in Windsor (August 25), and destroyed 2 to 3% of the fruits in a half-acre in Mansfield (September 4-6). -- Robert C. Cassell.

Tobacco Mosaic (Virus) was common on pepper plants in Cass County, INDIANA, J. S. Tidd, week ending August 12.

In ILLINOIS, in the Sterling pepper area in Whiteside County visited with Dr. H. B. Linn of the Illinois Experiment Station during the week ending August 5, 10% of the nearly mature plants in a 1-1/2-acre field were either dead or dying from a Basal Stem Rot, which in some respects resembled a delayed damping-off or even a collar rot. Cultures are being made to determine the causal organism. Traces of the same trouble were found in one other planting of nearly an acre. Tobacco Mosaic was common on pepper plants on one truck farm near Peoria in Peoria County, 50% of the plants being so severely infected that some of them were stunted. Traces of Blossom-End Rot were also observed near Peoria. -- J. S. Tidd

Anthracnose (Colletotrichum nigrum) was generally prevalent but causing only a trace of damage on pepper fruit on the University of MISSOURI Horticultural Farm near Monett. -- T. W. Bretz, week ending August 26.

About 25 acres were examined in ARKANSAS during the period July 27 to August 12. Leaf Spot (Cercospora capsici) was observed causing slight defoliation and yellowing of the leaves in a field near Rohwer in Desha County and also in a small planting near Van Buren in Crawford County. Southern Blight was causing loss of nearly 5% of the plants in the 2 plantings. -- Howard W. Larsh.

In TEXAS, bell peppers and hot peppers in the vicinity of El Paso showed symptoms of Wilt, although the internal discoloration of the stems was lacking. Specimens examined by Dr. D. A. Preston showed Fusarium sp. only. -- George E. Altstatt, September 8-13.

SWEETPOTATO STEM ROT IN GEORGIA

Julian H. Miller

During the summer of 1944 a survey was made of the incidence of Stem Rot (Fusarium oxysporum f. batatas) in sweetpotato projects conducted by Vocational Teachers and Extension Agents, and in some commercial fields. Results are given by counties.

Stephens County. June 16, variety Running Porto Rico: 19,500 plants from demonstration beds set on 8 farms showed no Stem Rot.

Gwinnett County. June 19, Running Porto Rico: 8200 plants from demonstration beds set on 3 farms exhibited no Stem Rot, but a trace was found among 8100 plants from the same bed set on 4 farms. In this case the potatoes bedded were from vine cuttings that passed a field inspection taken from a field with a trace of Stem Rot. Later, a commercial field of about 3 acres was inspected and about 2% of these plants showed Stem Rot.

Worth County. July 7, Running Porto Rico: 55,000 plants on 3 farms showed no Stem Rot, while 5000 from the same demonstration bed were set in a field with another lot of slips that showed 2%. In a commercial field of 5 acres, 3 plants were found with Stem Rot, and in another of 2 acres there were 6 such plants.

Dooly County. July 7, Running Porto Rico: the following fields were examined along the highway: 1/2-acre, 50% Stem Rot, 1/2-acre 70%, 1/2-acre 5%, 1/10-acre 1%, 1/4-acre 2%, and 1-acre with none.

Dodge County. July 8, Running Porto Rico: 32,000 plants set on 4 farms from demonstration bed showed no Stem Rot. Commercial fields: 1/2 acre from local plants contained 5% Stem Rot; 2 acres, plants from Valdosta showed none; 4 acres also in plants from the same source were free except in resets of Bunch Porto Rico from Cordele, which showed 20%. The following were all in the same Bunch Porto Rico: 1/2 acre 10%, 1/2 acre with 7%; 1/2 acre with 20%. On July 9, other fields in Running Porto Rico: 1/2 acre 8%; 1 acre 3%; 1 acre 3%; 1 1/2 acres 2%; 1 acre 1%.

Carroll County. July 17, Running Porto Rico: 12,500 plants from demonstration bed set on 8 farms had no Stem Rot but one such plot of 1000 plants showed a trace. This last field had been in potatoes before. In addition 7 fields of about 1/2 acre each set from slips bought in Carrollton all had a trace or more of Stem Rot.

Monroe County. July 18, Running Porto Rico: 22,000 plants from demonstration bed on one farm showed no Stem Rot. Also, 5000 of these plants on another farm also not diseased, but the farmer finished out 3 rows with plants from another source and several cases were found there. Three other commercial fields of about 2 acres each were examined and no Stem Rot found.

Richmond County. August 22, Running Porto Rico: 2 acres in demonstration showed a trace of Stem Rot.

Johnson County. August 22, Running Porto Rico: 3 fields in demonstration, 4 acres, trace of Stem Rot found in one; 1/2 acre, from the same source, on another farm exhibited about 1%.

Emanuel County. August 22, Running Porto Rico, plants in demonstration: 1 1/2 acres no Stem Rot; 1 1/2 acres with a trace; 2 acres with a trace; 1 1/2 acres with none.

Dooly County. August 23, Running Porto Rico, in demonstration: 1 acre with no Stem Rot; 1/2 acre with none; 1/4 acre with a trace. On another farm also part of the demonstration, 1 acre with a trace of Stem Rot. Commercial fields: 1 acre with none and 1/2 acre with a trace.

Peach County. August 24, commercial fields; all Bunch Porto Rico: 4 acres with 25% Stem Rot; 3 acres with a trace; 6 acres with a trace; 25 acres with 25%; 3 acres with a trace.

Walton County. September 4, Running Porto Rico, plants in demonstration: 2 acres, trace of Stem Rot in part of field near hog lot; 1 acre vine cuttings from above, trace of Stem Rot; 1 1/2 acres with no Stem Rot.

Either Georgia or South Carolina certified sweetpotatoes were bedded for the demonstrations and in most cases the resulting vines were free from Stem Rot. In practically every instance where it did occur the farmer had failed in part of the program, such as planting where sweetpotatoes had been grown before, in an old garden, or near a hog lot or barns. A trace of Stem Rot was found in most commercial fields, and in some, such as those in Peach County, the loss was serious.

UNIVERSITY OF GEORGIA COLLEGE OF AGRICULTURE

ORANGE RUST A MARKET FACTOR IN COLORADO SPINACH

G. B. Ramsey and M. A. Smith

Since the report of Barss[1] on a destructive rust of spinach in the Northwest in 1922 this disease has not been recorded as being of economic importance until recently. A report of the occurrence of the aecial stage of Puccinia aristidae Tracy (P. subnitens Diet.) on Colorado spinach was made in 1943.[2] In view of the fact that this disease again (June 1944) caused serious damage to some of the market spinach grown in the river bottom land in the vicinity of Denver, it seems advisable to make a more complete report. Pool and McKay[3] found this rust causing moderate damage to sugar beets in the vicinity of Rocky Ford, Colorado, in 1912-13 and noted that the telial form was abundant on salt grass (Distichlis stricta (Torr.) Rydb.) in that region. This spring specimens of salt grass from near a field of spinach severely affected with rust have been examined and were found to have numerous sori bearing uredo and teliospores. Therefore, it seems likely that spores produced on salt grass may have been the source of infection for the spinach during the past 2 years.

Specimens of both the flat and curly types of spinach showing early and advanced stages of infection have been received from C. G. Brand, Federal Inspector of Fruits and Vegetables on the Denver market. He reports that during the past 2 years when rust has been important on spinach, the spring weather has been cool and frequent showers occurred. The disease appeared during the first 2 weeks of harvesting in early June and disappeared shortly thereafter when warm and dry weather prevailed. Unlike downy mildew, rust does not seem to recur after it has once disappeared even though rainy weather follows. This would seem to indicate that most of the infections on spinach occur during a relatively short period.

Although the rust on spinach in Colorado seems to be localized in the river bottom land near Denver, and in many instances the infections are light, there have been heavy infections of some fields and great difficulty

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1 Barss, H. P. Destructive rust (Puccinia subnitens Dietel) on spinach in the northwest. Phytopath. (Abs.) 12: 446, 1922.

2 Ramsey, G. B. Spinach rust in Colorado. Plant Dis. Reprtr. 27: 255. 1943.

3 Pool, Venus W., and M. B. McKay. Puccinia subnitens on the sugar beet. Phytopath. 4: 204-206. 1914.

was experienced in marketing the crop. Some fields have been plowed up because the severe spotting of the leaves on 50 to 90% of the plants made the crop unmarketable. A few small spots on the plants do not greatly reduce their value but when numerous bright orange sori become conspicuous the crop is greatly damaged. The early infections appear as light yellowish-green spots 1 to 2 mm. in diameter. These are most prominent on the under side of the leaves. As the sori begin to form the spots enlarge and the central area becomes yellow. Eventually the cluster-cups bearing bright orange spores are conspicuous in the central area of the spots. Apparently the sori mature quickly for some growers have reported a few small inconspicuous spots at one harvesting and on the next day almost twice as many spots were visible.

U. S. DEPT. OF AGRICULTURE, BUREAU OF PLANT INDUSTRY, SOILS, AND AGRICULTURAL ENGINEERING, CHICAGO.

DISEASES REPORTED ON OTHER VEGETABLE CROPS

CONDITIONS AFFECTING CROPS IN AREAS SURVEYED IN NEW YORK AND PENNSYLVANIA: In NEW YORK, a survey was made on August 22 to 24 in the vegetable-growing areas of Nassau and Suffolk Counties on Long Island. Dr. Charles Chupp, Dr. R. D. Sweet, and Mr. F. M. Gordon of the New York State College of Agriculture, Ithaca, assisted in the work done in Nassau County, and Dr. H. S. Cunningham, of the New York Agricultural Experiment Station, Riverhead, in Suffolk County.

The most important factors adversely affecting the yield and quality of Long Island crops have been the prolonged drought and high temperatures this summer, especially in late July and early August. In some areas the farmers complained that they had had no effective rain since late April. In general, the last good rains were about June 22. Although the damage done by the drought was considerably alleviated by extensive irrigation where available, the high temperatures have caused considerable damage in the way of foliar burning and stunted, unthrifty plants.

In southeastern PENNSYLVANIA, a survey was made with Dr. R. S. Kirby, Extension Plant Pathologist, Pennsylvania State College, on August 29 to September 1, chiefly in Lancaster (August 29), Chester (August 30), Delaware (August 31), and Montgomery (September 1) Counties.

The season has not been favorable for widespread epiphytotics in this area, and much of the summer has been dry with high temperatures common. This region did receive a good rain in early August that relieved the drought period that had prevailed for about 6 weeks, and recent rains have further alleviated the troubles arising from dry, hot weather.

The fields and orchards mentioned in the reports on separate crops are individual cases surveyed more or less in detail. An attempt was also made to generalize somewhat by making brief stops at other places and there to compare conditions with those in situations studied more intimately.--J. S. Niederhauser

ASTER YELLOWS ON VARIOUS HOSTS IN MAINE: At Aroostook Farm in Presque Isle attention was called by Dr. Reiner Bonde to a number of infected wild and cultivated hosts of the Aster-Yellows Virus. The cultivated hosts were garden carrot, parsnip, onion, lettuce, and celery, all in close

proximity to the potato plots. Dr. Bonde had also seen infected summer squash at an earlier date. The weed hosts were common dandelion, common plantain, dog fennel, and sow thistle. -- Robert C. Cassell, August 28-September 2.

DISEASES IN PENNSYLVANIA VICTORY GARDENS: (See also above under general remarks). In Delaware County, community Victory gardens at Yeadon and Upper Darby were visited August 31 to determine what the disease problems were at this time. The following diseases were noted:

On TOMATO, Mosaic (Tobacco-Mosaic Virus, Marmor phaseoli) was present in 100% of the plants in 2/3 of the plantings. The plants were infected early in the season, probably when set out. Early Blight (Alternaria solani) was resulting in 20 to 90% defoliation, the most severe cases being on staked plants. Wilt (Fusarium [oxysporum f.] lycopersici or Verticillium sp.) was present in most plantings, but only 5 to 10% of the plants were affected.

On LIMA BEAN, Lima Bean Mosaic (Marmor cucumeris var. phaseoli) was present in amounts up to 10% in 3 plantings. Bacterial Spot (Pseudomonas syringae) was present in one planting as a trace.

Phomopsis vexans was rotting 40% of ripe EGGPLANT fruit in one case.

Alternaria Leaf Spot was slight on KOHLRABI.

Tobacco Mosaic was the most important disease on PEPPER, and was affecting 25 to 96% of the plants. Fruit Rot (probably due to Sun-scald followed by Macrosporium) was destroying 30% of the fruit.

In one BEAN planting, 65% of the plants had Mosaic; in others the amount varied from none to 15%.

The Leaf Spot caused by Septoria lactucae was seen in one LETTUCE plot, but was only slight in severity.

Soft Rot [? Erwinia carotovora] was present on a plant or two in 3 CABBAGE plots, and Alternaria Leaf Spot [species not designated] was slight and doing little damage. -- John S. Niederhauser.

BACTERIAL HALO BLIGHT ON BUSH BEANS IN MAINE: A light to moderate infection of Halo Blight (Pseudomonas medicaginis var. phaseolicola) was 100% prevalent in one garden in Presque Isle. Halo Blight was also present in a planting in Milo, in which the leaves had dried up, but a trace of the disease was observed on the pods. -- Robert C. Cassell, August 28-September 2.

BEAN DISEASES IN NEW YORK: In Nassau County on Long Island bean fields mostly showed little or no disease because of the long-continued dry weather. In one field of Bountiful snapbeans, 80 to 90% of the plants were stunted and very abnormal in appearance. The dark, rugose leaves curled downward at the margin and were commonly yellow near the margins. Some plants were dying early. These symptoms, and the general distribution of the trouble within the field were considered to be evidences of Phosphorus Deficiency. About 20% of the plants were affected by Rhizoctonia, which was causing scar-like lesions on the main root and in many cases girdled and killed the plant.

In another field of Bountiful beans, 75% of the plants showed Bean Mosaic (Virus) symptoms. No information as to seed source was obtained. -- John S. Niederhauser, August 22-24.

FIRST REPORT OF SCLEROTINIA WILT; AND OTHER BEAN DISEASES OBSERVED IN COLORADO: Mosaic was prevalent in all fields inspected in Mesa County in western Colorado. Infection varied from a slight amount to 60% in some fields. Dry Root Rot (Fusarium solani f. phaseoli) was especially serious in low areas in the fields where drainage was poor. In 2 fields Red Node (Virus) infection ranged from 10 to 15% and was general over the fields. In a late planting it was found mostly on the outside rows and at the ends of the rows. A slight amount of Curly Top (Virus) was observed in 2 fields. A Nonparasitic Trouble was again prevalent. A trace of Bacterial Blight (Xanthomonas phaseoli) was noted.

Sclerotinia Wilt (White Mold) (S. sclerotiorum) was found in one field in Weld County in northern Colorado. This is the first occurrence of Sclerotinia Wilt on beans in Colorado and was first observed by Dr. W. J. Zaumeyer of the U. S. Bureau of Plant Industry, Soils, and Agricultural Engineering. -- E. W. Bodine, week ending September 9.

BEAN DISEASES IN WESTERN OREGON: Rust (Uromyces phaseoli var. typica) was very prevalent in certain fields in Douglas County (August 28-29). Evidently, infection in the subsequent crop is increased when vines are allowed to stand long after harvest, and equipment from affected fields is used without treatment to support succeeding crops. Where fields had been enlarged, the contrast in severity of Rust in the older as compared to the new part of the field was very marked. In new areas only a drift of late infection from the older part of the field was evident. The value of treating equipment was evident in a field in Lane County (August 30-31), called to my attention by Dr. J. A. Milbrath, in which Rust had been severe during the preceding season. In part of this field, the poles had been dipped before use on the current crop, and in part no treatment was given. Amount of infection was distinctly reduced in the part of the field where treated poles were used.

In Multnomah County (September 7-9) some fields appeared to be free from Rust and in most cases it would be necessary to hunt for specimens. In no case was any reduction in yield being caused.

Traces of Cottony Rot (Sclerotinia sclerotiorum) were found on pods in one field near Hayden Bridge in Lane County.

Mosaic was scattered through plantings in Douglas County but no serious losses were noted.

The Virus-like disease complex reported earlier (PDR, Sept. 1, pp. 859-860) was found present and causing severe losses in additional fields in Lane County, and some of the fields observed to be affected at the time of the earlier report were revisited. In the 2 weeks between visits, the disease had become very severe and many vines were partially defoliated or dead.

This virus-like trouble was also found from Troutdale in Multnomah County eastward along the Columbia River to Rainier in Columbia County. No severe attacks causing significant loss of crop were noted in large plantings in this area, although some small garden plantings near Troutdale were very severely affected. In addition to the Blue Lake type of bean, the trouble was noted on Oregon Giant and on a large-pod green type of unknown identity. Lima beans in the same planting were free from any symptoms of the disease. -- Lytton W. Boyle.

DISEASES OF LIMA BEANS ON LONG ISLAND: In Suffolk County only a trace of Bacterial Spot (Pseudomonas syringae) was noted in 2 of 3 fields seen. No Downy Mildew was seen. Aphis and red-spider injury was slight in all 3 fields. -- John S. Niederhauser, August 22-24.

DISEASES REPORTED ON CARROTS: In Nassau County on Long Island, NEW YORK, the Leaf Blights (Cercospora carotae and Macrosporium (Alternaria) carotae) were present only in traces in 2 fields. An interesting discovery was to find Dodder (Cuscuta sp.) in one field. The infestation had apparently gotten under way relatively recently, since the parasite had in no one place covered more than 20 to 25 plants in a row. But there were a large number of such small spots throughout the field, which was well-cultivated and free from weeds. To control this potential menace, the grower was removing and destroying the Dodder, together with the parasitized plants.-- John S. Niederhauser, August 22-24.

In WISCONSIN, Aster Yellows (Aster-Yellows Virus) appeared to be more severe than last year, especially in the Racine-Kenosha area. Counts made in several fields showed from 25 to 70% infection. Abundant infection was also observed in commercial plantings in Ozaukee and Brown Counties. Cercospora Blight was observed only in traces in Kenosha and Racine Counties. Some difficulty was experienced from Poor Germination in Racine and Walworth Counties. On muck soil in Walworth County a poor stand resulted apparently from a combination of unsatisfactory planting technique and subsequent weather. -- Edwin E. Honey, July 24-August 9.

In southeastern MINNESOTA, visited with R. C. Rose of the University of Minnesota, Aster Yellows was the principal problem on carrots, every planting being heavily infected. -- Ian W. Tervet, September 7, 8, and 9.

In WYOMING truck gardens in the vicinities of Cody and Worland in Park and Washakie Counties respectively, Aster Yellows was found ranging from a trace to 10%. Soft Rot (Erwinia carotovora) was found in a few plants.-- E. W. Bodine, August 20-September 2.

Carrot seed fields at Moscow, IDAHO, showed severe Bacterial Blight (Xanthomonas carotae), with many sectored heads and abundant exudate. Yield will be reduced. -- Earle C. Blodgett, August 13-19.

In the Pendleton area in northern OREGON (August 3-4) many carrots were being lost in a field planting from cracking followed by Soft Rot, the result of ignorance of the necessary care in control of irrigation on the part of the dry-land farmer who replaced a gardener in the armed services.

In this region also, many tap roots were covered with tufts of young fibrous roots, a fragment of the dead primary fibrous root usually being evident in the center of such tufts. Such plants show some chlorosis and more red coloring in their leaves than normal plants. This condition appears to be correlated with irrigated areas where soil temperatures are relatively high; it was noted in the Pasco-Kennewick area of Washington (PDR Aug. 22, p. 845) and about Pendleton in Oregon, but not at Walla Walla in Washington nor in the Redmond-Bend area in Oregon.

Rootknot was noted to occur on a few plants in 2 fields in Lane County in western Oregon (August 30-31). Traces of Aster Yellows were noted in Lane County, and also in Marion County (September 2) and phyllody was evident on some bolting plants in the latter. -- Lytton W. Boyle.

EARLY BLIGHT OF CELERY IN NEW YORK AND PENNSYLVANIA: In Nassau County (August 22-24) on Long Island most fields seen showed little or no disease because of the dry weather. In one field Early Blight (Cercospora apii) was severe. Practically 100% of the plants were affected with from 1 to 5 lesions on the outer leaves, and since the plants were only about 8 inches high, the potential damage was great.

In a small celery field in Lancaster County, Pennsylvania (August 29), Early Blight was already severe on small plants having only 4 to 5 leaves. Lesions were present on nearly all the leaves on all the plants. It is doubtful that the celery would be able to produce any crop against such odds. -- John S. Niederhauser.

CELERY DISEASES IN OREGON: In Marion County (September 2), Late Blight (Septoria sp.) was evident but in no instance was it observed to be causing any crop loss. According to growers little difficulty has been encountered in controlling this disease so far this season.

Rootknot (Heterodera marioni) was found in one planting of late celery. This plot appeared to be quite thoroughly infested, judging from sample plants pulled from various parts. It is too early to estimate the possible crop reduction. According to information obtained from the Celery Growers' Association and from the shipping point inspector, this is the first known occurrence of Rootknot on the celery crop in this area. Infestation at present appears to be limited to the one plot.

In 2 instances plantings were abandoned because the severity of the symptoms of Boron Deficiency made the crop unfit for market.

Heart Rot was noted in certain plantings of the early crop. Where this occurred an oedemic condition was also evident on the stalks.

Various types of undesirable growth were scattered through certain fields, including bolting plants, spindling development of several stalks from a single crown, and stunted hearts showing excessive numbers of leaflets. In some instances this represents as high as 10% loss.

Only one planting was observed in Multnomah County (Sept. 7-9). This was completely lost because of Late Blight. Control practices apparently had been lax. -- Lytton W. Boyle.

DISEASES OBSERVED ON BROCCOLI IN PENNSYLVANIA: A small plot of Broccoli in Lancaster County (August 29) showed about 75% of the plants in various stages of Bacterial Soft Rot [Erwinia carotovora]. The bacteria had entered through the cut-surface left when the first inflorescences were removed. Alternaria Leaf Spot [species not designated] was noted on all of the plants, but with only 5 to 10 lesions per plant, the damage was slight. In addition to the Alternaria spots, on about half of the leaves on all the plants there were smaller, lighter-colored, circular spots that yielded spores thought to be those of Cercosporella (Cylindrosporium) brassicae. On the petiole there were numerous, dark, somewhat elongated flecks about 0.5-1 mm. in length, and these tiny lesions also contained the filiform conidia that were identified as those of the Cercosporella. The leaves with this petiolar spotting were easily removed from the stem, and many had already dropped off by abscission. -- John S. Niederhauser.

DISEASES OF CABBAGE: In NEW YORK, Soft Rot was present as a trace in 2 fields observed in Nassau County on Long Island. Insects had apparently

provided the infection courts. Alternaria Blight was present as a lesion or two on approximately 5% of the plants in one field. -- John S. Niederhauser, August 22-24.

In the principal truck crop areas of southeastern MINNESOTA, visited with Dr. R. C. Rose of the University of Minnesota, Black Rot (Bacterium campestre) [Xanthomonas campestris] was common in some fields, and was apparently related to the seed source. Little Yellows (Fusarium [oxysporum f.] conglutinans) was seen, but this disease, in conjunction with Black Rot, has caused some areas to go out of the growing of cabbage. A few years ago, there was quite an extensive acreage of cabbage near Dodge Center, Kellogg and Wabasha. Few fields of cabbage now are to be found in these areas. -- Ian W. Tervet, September 7-9.

CAULIFLOWER DISEASES: In a new commercial cauliflower area in WEST VIRGINIA, in the Canaan Valley of Tucker County, the most severe disease noted was Black Rot, which affected 2% of the plants in 2 fields. Black Leaf Spot [Alternaria circinans] was quite prevalent but damage was negligible. Whip-Tail (Nonparasitic) has appeared in one field with soil of shale origin. Aphids and worm damage were severe in all fields visited.-- R. E. Atkinson, August 28-September 2.

In Lane County in western OREGON about 90% of the plants grown in a seedbed near a cabbage seed crop now show symptoms of the Vein-Banding type of Mosaic (Virus), and traces to a small percentage of the disease were noted in plantings in several locations. -- Lytton W. Boyle, August 30-31.

DISEASES ON OTHER CRUCIFERCUS CROPS: White Rust (Albugo candida) was found to be general in Radish fields planted for seed in Park County, WYOMING. Infection ranged from a trace to 1%. -- E. W. Bodine, August 20-September 2.

In Chester County, PENNSYLVANIA, Powdery Mildew (Erysiphe polygoni) was present on all the leaves of a few garden plants of Rutabaga. -- John S. Niederhauser, August 30.

LEAF SPOT ON OKRA IN MISSISSIPPI: Cercospora Leaf Spot (Cercospora sp.) was found to be very common and abundant on leaves in small plantings in the vicinity of Poplarville in Pearl River County. -- Douglas C. Bain, August 28-September 1.

REPORTS ON ONION DISEASES: In TEXAS, Onion plants grown from "sets" (seedlings) near Texline showed a trace of Pink Root (Phoma terrestris). Another field near Hereford showed about 3% damage due to the same organism. South of Lubbock one field of onions grown from seed showed symptoms typical of the "Blight" as previously reported from Robstown in the Coastal Bend area (PDR 28 (6): 199-201, Mar. 15, 1944). Occasional plants in this field showed Purple Blotch [Alternaria porri] symptoms. -- George E. Altstatt, September 8-13.

In the truck crop areas in southeastern MINNESOTA, visited with Dr. R. C. Rose of the University of Minnesota, the principal disease on onions is Aster Yellows resulting from infection by the Aster-Yellows Virus. All fields were attacked, infection ranging in different fields from 10 to 20%. In about 1/3 of the fields, Thick Neck, apparently physiogenic in origin, was also of importance, one field having about 75% of the plants

affected. In a few fields near Hollandale, Pink Root was causing slight to moderate loss, and in one field near Dodge Center, Bulb Rot (Fusarium spp.) was causing heavy loss. -- Ian W. Tervet, September 7-9.

DISEASES REPORTED ON APPLE AND PEAR

Reports are of Emergency Plant Disease Prevention Project surveys.

APPLE DISEASES IN NEW ENGLAND: A trace of Scab (Venturia inaequalis) on leaves and fruits, and light to moderate infection by Frogeye (Physalospora) on about 70% of the leaves, were noted on a few trees examined in Monticello, Maine (August 28-September 4).

In Franklin and Hampshire Counties in western Massachusetts (August 21-24) light to very heavy Frogeye infection was observed on 70 to 100% of the leaves, with occasional Black Rot fruit mummies, on partially sprayed or neglected orchards in Shelburne Falls, Buckland, Cummington, and Chesterfield where the May 18 freeze had left the trees in some areas almost devoid of fruits. Scab on leaves ranged from a trace to 100% in the Chesterfield-Shelburne Falls area, depending upon the care of the trees. In Buckland, where there was 100% heavy infection on leaves, there was also a moderate amount of Scab on the fruits. A trace of Apple-Cedar Rust (Gymnosporangium juniperi-virginianae) was found in Chesterfield, light infection occurred on 100% of the leaves of a few trees in Cummington, and light to moderate infection on 70% of the leaves of a few trees in Buckland.

In most commercial orchards in Rhode Island (August 17-18) where a careful spray or dust program has been followed Scab seems to be well under control. In such orchards only a small percentage of the fruits have Scab and infected leaves average 10 to 20%. In 2 cases seen control had been limited or neglected and the fruits were 100% scabby and the trees being defoliated. Black Rot was found on 100% of the leaves with some Fruit Rot on certain varieties in Kingston and Scituate. Blemished areas and frost rings were numerous on fruits in the Kingston area. The freeze of May 18 apparently did considerable damage to apples.

In an old abandoned orchard in South Foster, Rhode Island (September 7-9), McIntosh trees were almost completely defoliated by Scab and all fruits were heavily infected. An unidentified variety was 100% affected with Black Rot; moderate to heavy infection was present on the leaves and 50% of the fruits were either mummified or in some progressive stage of Black Rot.

In Connecticut (August 14-16) Scab does not seem to be too severe where adequate protection has been given the trees. In a few McIntosh orchards visited Scab lesions on the leaves range from a trace to 70% and the fruits are mostly clean, with only an occasional orchard showing 15% to 20% of scabby fruits. In 2 orchards seen Black Rot seemed unusually prevalent; 100% of the leaves on some varieties were affected in one in Guilford, and 70% in another in North Bradford, and a trace of fruit infection was present in both. One fairly large orchard was seen in Mansfield (September 4-6) that apparently had been subject to the spring freeze as there were practically no fruits present; consequently, the spray program had probably been light. Scab was moderate to heavy on about 70% of the leaves of susceptibl

varieties, and light Frogeye infection occurred on 40 to 50% of the leaves. -- Robert C. Cassell.

APPLE DISEASES IN PENNSYLVANIA: In the area surveyed in southeastern Pennsylvania, chiefly in Lancaster, Chester, Delaware, and Montgomery Counties, no orchards were seen that had not been sprayed, and diseases this year are being held well in check. No serious outbreaks were seen in 7 orchards visited. In 5 of these orchards no apple Scab could be found, even though this is ordinarily the most common disease on apple.

In Lancaster County, in an orchard of sprayed Smokehouse trees, traces of Scab, Bitter Pit [Physiogenic], Sooty Blotch [Gloeodes pomigena], and slight amounts of Fireblight [Erwinia amylovora] (on young twigs and suckers) were seen. A Leaf Spot thought to be caused by Physalospora cydoniae [P. obtusa] was also present as a trace. In this orchard the worst trouble was caused by the second brood of codling moth, which apparently was coming on after the last spray application.

In Chester County, in one Rome orchard several trees had "Black Pox" or Measles (Helminthosporium papulosum) on the inner and lower branches and twigs. No spotting of the fruits or foliage was noted. This disease has been under surveillance here for several years by Dr. R. S. Kirby of Pennsylvania State College. In the same orchard, Fireblight was slight, with 2 to 3 blight twigs or sprouts per tree. In another orchard Brooks' Spot (Mycosphaerella pomi) was seen in trace amounts. -- John S. Niederhauser August 29-September 1.

APPLE DISEASES IN TEXAS: In a 9-year old apple orchard near Troup about 8% of the trees have been killed or damaged. The most common cause seemed to be Armillaria mellea. Crowngall (Bacterium [Agrobacterium] tumefaciens) was present in some cases, and one tree was infected by Sclerotium rolfsii. (S. rolfsii was reported from this orchard several years ago). The fungus Schizophyllum commune was present wherever there were injured surfaces on root, trunk, or twigs. -- George E. Altstatt, September 8-13.

APPLE DISEASES IN IOWA: Orchards surveyed in southeastern Iowa (August 22-26) were relatively free from the common diseases. Where spraying had been kept up the fruit was comparatively free from blemishes and of good quality. Most of the plantings consist of Golden Delicious, Grimes Golden, Jonathan, and Winesap, with other varieties here and there. Scab may mar some 5% of the fruit, and worms and other agents another 5%. Local estimates place the fruit crop in that area at about 75% of the normal.

Some 90 acres of apple orchards were surveyed in the vicinity of Mitchellville in Polk County in central Iowa (August 30-September 9), mostly Jonathan, Delicious, Golden Delicious, and Grimes Golden, with a scattering of Duchess, McIntosh, and other fall apples. Fireblight was general, varying from a trace to as much as 15%. One interesting case was pointed out by the manager. A section of the orchard had been in sod for a number of years. Part of it had been plowed up and clean cultivated for 5 or 6 years. Willow Twig apples in the clean cultivated portion were severely infected with Fireblight while those on the sod were free from infection. The suggested explanation for this difference in apparent susceptibility was that the trees on the sod were making less vegetative growth and were therefore more hardened. Scab was present in amounts up to 5% on the fall apples such as McIntosh and Duchess, but there was little on Jonathan, Delicious,

or Grimes Golden. Blotch [Phyllosticta solitaria] was present but only as a light infection. Cedar Apple Rust was found as a light infection on all varieties. -- Edgar F. Vestal.

SHORTER NOTES ON APPLE DISEASES: Fireblight was severe in farm orchards in Kenosha, Walworth, Jefferson, and Dane Counties, WISCONSIN. -- Edwin E. Honey, July 24-August 9.

Scab was widespread in the apple orchards at the Northeast Experiment Station of the University of MINNESOTA at Duluth. -- Ian M. Tervet, August 28.

In northern IDAHO, Drought Spot and Corky Core (Boron Deficiency) were observed at the Sandpoint branch station. Scab caused severe damage in a commercial apple orchard and many backyard plantings. -- Earle C. Blodgett, August 6-12.

REPORTS ON PEAR DISEASES: In southeastern IOWA Fireblight was the most serious trouble observed on pears; in most cases trees were neglected and none were seen that were sprayed. -- Edgar F. Vestal, August 22-26.

In northern IDAHO pear Scab (Venturia pyrina) caused severe damage in some orchards and in many backyard plantings. In one yard Bartlett was practically free while Flemish Beauty showed severe fruit Scab.--Earle C. Blodgett, August 6-12.

In an obviously neglected orchard in Douglas County, OREGON, 100% of the fruit was severely affected by Scab. -- Lytton W. Boyle, August 28-29.

REPORTS ON PEACH DISEASES

Reports are of Emergency Plant Disease Prevention Project surveys.

PEACH YELLOWS IN THE CAROLINAS: On September 1, a trip to Campobello, in Spartanburg County, South Carolina, with J. A. Berly and M. B. Stevenson of the South Carolina Crop Pest Commission revealed the first authentic case of peach Yellows (Virus) in this State since 1930. It had been discovered that morning by Mr. Atkins of the Phony Peach eradication crew. A tour of adjacent areas showed Yellows to be present in Saluda and Melrose Station, Polk County, North Carolina. Since then it has been found in an orchard near Gramling, South Carolina, an adjacent town. -- Alton E. Prince, August 28-September 9.

PEACH DISEASES IN RHODE ISLAND: Brown Rot (Sclerotinia [Monilinia] fructicola) was found on 100% of the trees in a large orchard in Greenville. A few fruits were affected but commercial loss will be light. Brown Rot was also seen in Kingston. A light attack by Bacterial Spot (Phytomonas [Xanthomonas] pruni) occurred on approximately 50% of the leaves in the Greenville orchard. -- Robert C. Cassell, August 17-18.

BROWN ROT AND SCAB IN PENNSYLVANIA: In the area surveyed in southeastern Pennsylvania, picking was under way in the early varieties, and the prospects were for an average to a good crop. In a small orchard in Chester County Brown Rot had taken about 10% of the ripe fruit, while in a larger planting of 6 acres in Delaware County there was a 3 to 4% loss of ripe

fruit. In the latter orchard twig blight damage from Brown Rot was slight, and only 1 or 2 dead twigs on a few trees were noted. Peach Scab (Cladosporium carpophilum) was present on the fruit in each case in trace amounts. -- John S. Niederhauser, August 29-September 1.

DISEASES IN WESTERN COLORADO: In Mesa County peach harvest was well along and no serious diseases were encountered during the week ending September 9. Trace amounts of Powdery Mildew (Sphaerotheca pannosa var. persicae) and Coryneum Blight (Coryneum carpophilum) were found. Powdery Mildew was found only on the fruits. Approximately the same amount of Chlorosis was again evident as in 1943. A White Heart Rot (Poria sp.) was causing considerable damage in one orchard in the Redlands district. -- E. W. Bodine

LEAF CURL AND CORYNEUM BLIGHT IN NORTHERN IDAHO: Leaf Curl (Taphrina deformans) and Coryneum Blight together are extremely injurious to peaches in the Sandpoint and Hope areas, in fact in all of northern Idaho. Lack of attention to the prescribed treatment is responsible for most of the difficulty. -- Earle C. Blodgett, August 6-12.

BROWN ROT AND OTHER DISEASES IN WESTERN OREGON: In the vicinity of Albany in Linn County (August 24) secondary spread of Leaf Curl had occurred where spraying had not been thorough. Brown Rot (Monilinia sp.) also was very prevalent in such orchards; however, growers claim that the disease had not caused such severe losses as in past seasons. The weather has been comparatively dry. On the Slappey variety Cytospora Canker was very prevalent.

In Douglas County (August 28-29) Brown Rot was noted in every orchard observed. From a trace to 10% of the fruit was rotting. Distribution was very variable between trees in most orchards, probably owing to less thorough removal of mummies on some trees; this is also a likely explanation for the greater prevalence of fruit rot in the large trees of older orchards as compared to relatively young orchards. Dry weather has apparently helped to reduce spread. Infection on most fruit appeared to be of comparatively long standing. -- Lytton W. Boyle.

AUGUST WEATHER

(From U. S. Department of Commerce, Weather Bureau, Weekly Weather and Crop Bulletin for Week Ending September 5, 1944).

The weather of August 1944 was marked by small temperature departures and, while some sections of the country had abnormally heavy rains, large areas were quite dry. Map 1 shows the departures of mean temperature from the normal for the month and indicates that they were generally 3° or less in most areas. Slightly subnormal readings were reported from the Southeast, the lower Missouri Valley, the northern Rocky Mountain area, and south Pacific coast localities. Quite warm weather for the season prevailed in the Northeast, the Lake region, and the lower Great Plains where the departures were +4° or more.

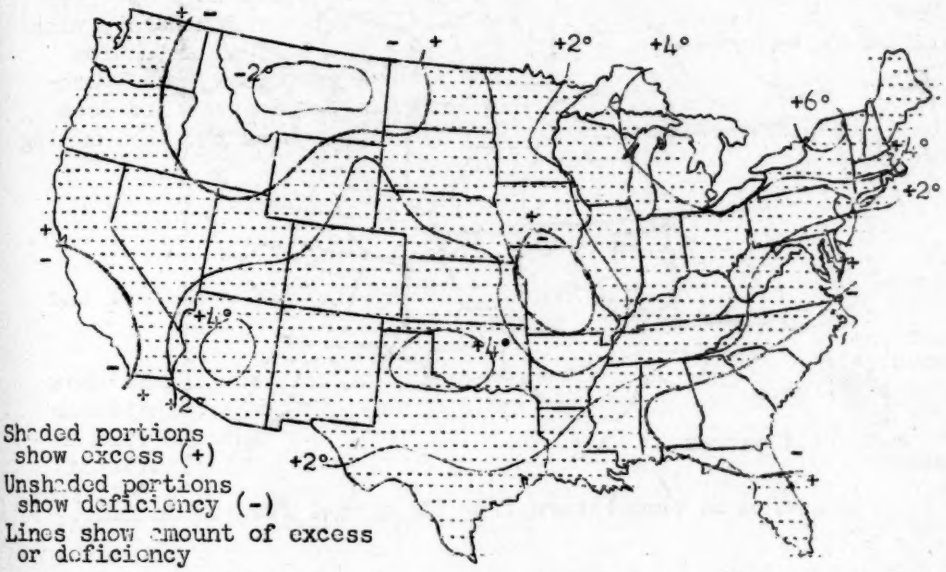
Precipitation was heavy to excessive in the lower Missouri Valley, the northern Great Plains, southern Texas, and in some other limited areas. In these regions the rainfall was from two to three times the normal amount, while adjacent areas were also substantially above normal. Precipitation was markedly deficient in much of the East and Southeast, with many stations reporting less than half of normal. A curious situation appears in Virginia where Richmond had 117 percent of normal, but Lynchburg only 50 percent. Much of the country west of the Rockies had less than half of normal and wide areas had no appreciable precipitation during the month (Map. 2).

THE SUMMER OF 1944

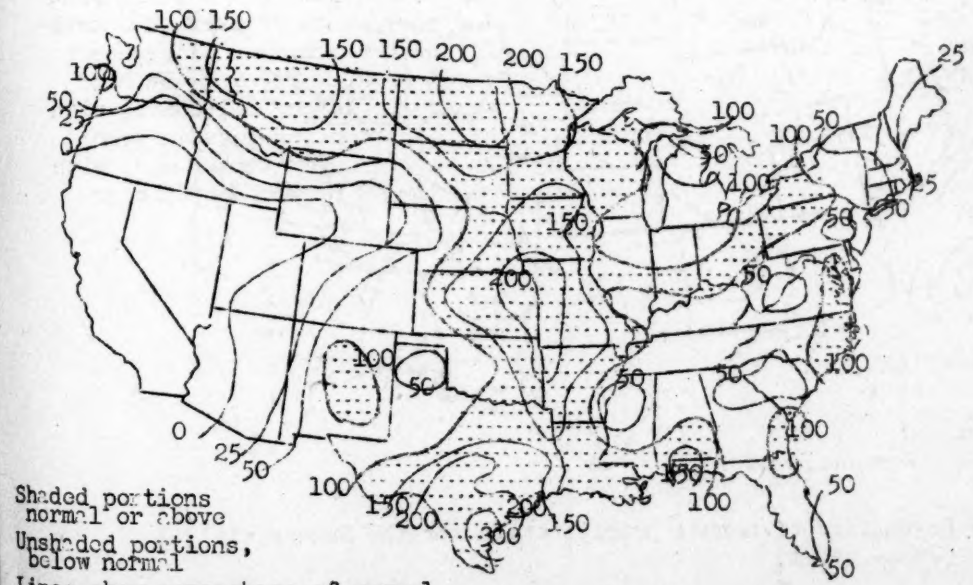
(From U. S. Department of Commerce, Weather Bureau, Weekly Weather and Crop Bulletin for Week Ending September 5, 1944).

The data for the combined summer months of June, July, and August show many interesting features and some marked contrasts in the precipitation occurrence. Temperatures were not abnormally high, as a general rule, as indicated in Map 3, with most of the country being within the limits of 2° from normal. Subnormal temperatures were general over a wide belt from Montana southwestward to California, but elsewhere slightly above normal temperatures prevailed. The largest plus departures were over the eastern Lake region and the Ohio Valley where they ranged mostly from 3° to 5°.

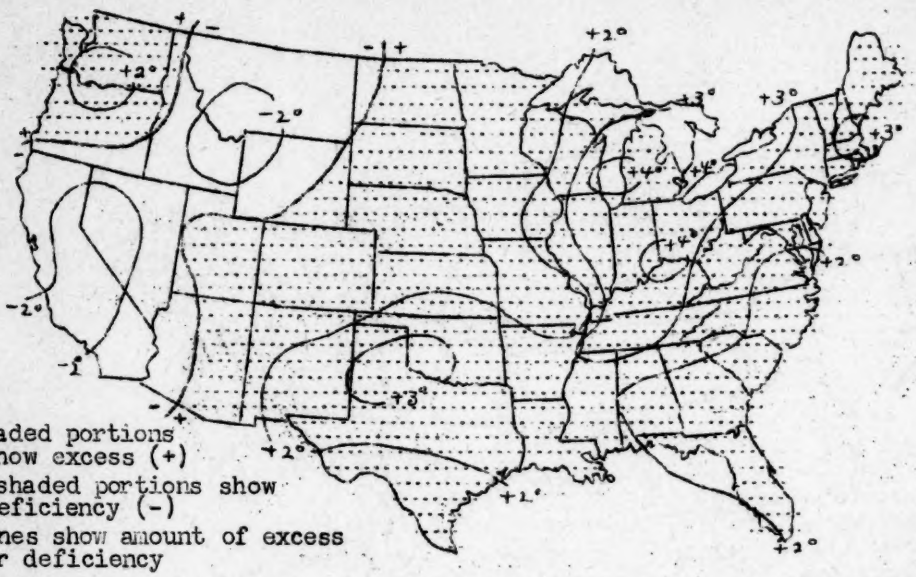
Precipitation was quite persistent over the eastern Great Plains and the lower Missouri Valley and in this area the totals for the season ranged from 125 to 150 percent of normal. Much of the northern Great Plains and the northern Rocky Mountain areas, extending southwestward over the northern Great Basin, had above-normal rainfall for the summer, the amounts being especially heavy in eastern Montana and northern Nevada. Much of the Ohio Valley and the South had very little rain during this time, with the percentages below 75 in large areas and 50 percent or less in some sections. Marked contrasts were evident in the data for the summer, with 179 percent of normal at Dubuque, Iowa, but only 70 percent at Chicago and Peoria, Illinois (Map 4).



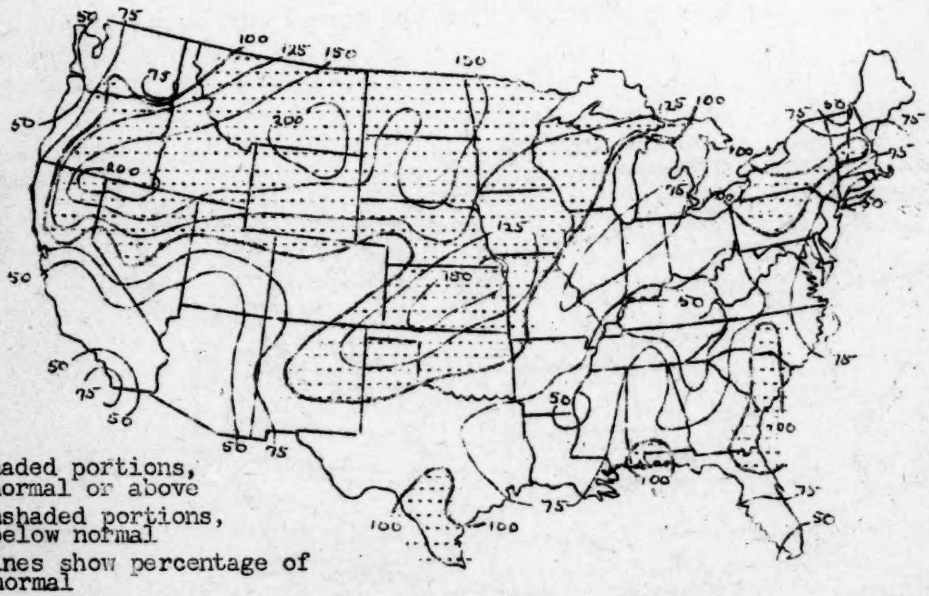
Map 1. - Departure of mean temperature from the normal for August 1944



Map 2. = Percentage of normal precipitation for August 1944



Map 3. - Departure of mean temperature from the normal for the Summer of 1944.



Map 4. - Percentage of normal precipitation for the Summer of 1944 (June-August)